



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/792,120 | 03/03/2004 | Chung Zen Chen | E1821-00001 | 3928 |
| 8933 | 7590 | 06/14/2005 | EXAMINER | |
| DUANE MORRIS, LLP IP DEPARTMENT ONE LIBERTY PLACE PHILADELPHIA, PA 19103-7396 | | | | HOANG, HUAN |
| | | ART UNIT | | PAPER NUMBER |
| | | 2827 | | |

DATE MAILED: 06/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/792,120 | CHEN, CHUNG ZEN | |
| | Examiner | Art Unit | |
| | Huan Hoang | 2827 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
 THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 30 is/are allowed.
- 6) Claim(s) 1-18,20,23-26 and 29 is/are rejected.
- 7) Claim(s) 19,21,22,27 and 28 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All
 - b) Some *
 - c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

| | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>033004</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 10 is objected to because of the following informalities:

The word "a" before "programmed state" (claim 10, line 3) should be "said".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-10, 23 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "said mirrored portion" in line 4, claims 23 and 29 recite the limitation "said amount" in line 1. There is insufficient antecedent basis for each of these limitations in the corresponding claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2827

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Fiocchi et al..

Fiocchi et al. discloses a method of regulating a supply voltage for providing a bit line voltage (column 4, lines 19-21) in a memory device and a semiconductor memory device having all the steps and elements as recited in claims 1-3 and 12-14 as follows:

detecting a bit line current provided in the memory cells (column 5, lines 50-53);

adjusting the supply voltage responsive to the detected bit line current to at least compensate for a voltage drop across the bit switch (column 6, lines 31-36), the voltage drop being dependent at least in part on the bit line current (column 2, line 66 to column 3, line 5);

increasing the supply voltage responsive to a detected increase in the bit line current and decrease the supply voltage responsive to a detected decrease in the bit line current;

maintaining a constant bit line voltage (column 5, lines 47-49);

a bit switch (transistors MW and MB, Fig. 5);

means for adjusting a supply voltage at the supply voltage node (Fig. 5, column 7, lines 63-65) responsive to the detected bit line current to at least compensate for a voltage drop across the bit switch.

Regarding claims 2 and 13, since the voltage drop is proportional to the bit line current, the voltage supply voltage is adjusted by increasing or decreasing the supply voltage responsive to a detected increase or a detected decrease in the bit line current.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 4-7, 11, 15-18, 20 and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiocchi in view of Hotta.

Fiocchi et al. discloses all the steps and elements as recited in claims 4-7, 11, 15-18, 20, 24-26 (Fig. 5 and column 6, lines 23-24 and lines 49-51) except for respective memory cells coupled to the supply voltage through a respective bit switch. However, Hotta discloses a plurality of bit lines each coupled to the supply voltage VDD through a respective bit switch to provide the supply voltage to the plurality of bit lines simultaneously. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Fiocchi et al. by using a plurality of switches each connected to a respective bit lines to provide the voltage supply to all of the bit lines at the time of programming.

Allowable Subject Matter

8. Claim 30 is allowed.

9. Claims 19, 21, 22, 27 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2827

10. Claims 8-10, 23 and 29 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach or suggest the following:

the step of generating the variable voltage component , the generating step comprising mirroring the total bit line current with a reduction ratio and generating the variable component from the mirrored portion.

wherein the reference voltage generating circuit comprises a resistance circuit coupled to a current mirror circuit, the current mirror configured to mirror the total bit line current with a reduction ratio.

wherein the adjusting means comprises a reference voltage generating circuit comprising a tunable resistance circuit coupled to a current mirror circuit, the current mirror circuit configured to mirror the total bit line current with a reduction ratio.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huan Hoang whose telephone number is (571) 272-1779. The examiner can normally be reached on Mon-Fri 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoai Ho can be reached on (571) 272-1777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2827

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Huan Hoang
Primary Examiner
Art Unit 2827

HH
6/8/05.